1pw

Please type a plus sign (+) instale this box -> +

PTO/SB/21 (08-00)

Approved for use through 10/31/2002. OMB 0651-0031 U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE in Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

			Application Number	10/698,492
	ISMITTAL		Filing Date	November 3, 2003
F	ORM		First Named Inventor	John D. Brennan
(to be used for all con	respondence after ir	nitial filing)	Group Art Unit	1645
		•	Examiner Name	N/A
Total Number of Pages	in This Submission	7	Attorney Docket No.	571-886
		ENCL	OSURES (check all that apply)	
			ment Papers Application)	After Allowance Communication to Group
Fee Attached		☐ Drawin	g(s)	Appeal Communication to Board of Appeals and Interferences
Amendment / Response		Licens	ing-related Papers	Appeal Communication to Group (Appeal Notice, Brief, Reply Brief)
After Final		Petition	า	Proprietary Information
Affidavits/declaration(s)			n to Convert to a conal Application	Status Letter
Extension of Time Request		Power of Attorney, Revocation Change of Correspondence Address		Other Enclosure(s) (please identify below):
Express Abandonment Request			al Disclaimer st for Refund	
Information Disclo	sure Statement	CD, N	umber of CD(s)	
Certified Copy of I	Priority	Rema	ırks	
Response to Miss Incomplete Applic				
Response to Missing Parts under 37 CFR 1.52 or 1.53				
	SIGNA	ATURE OF	APPLICANT, ATTORNEY, O	R AGENT
Firm Patricia Power, Registration or Individual name BERESKIN & PARR			No. 51,379	
Signature Courts		es.		
Date July 12, 2004				
		CE	RTIFICATE OF MAILING	
				al Service as first class mail in an envelope
addressed to: Assista	ant Commissioner fo	r Patents, W	ashington, D.C. 20231 on this da	te:
Typed or printed nam	е			
Signature				Date

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be send to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



Patricia Power B.Sc., Ph.D. (Chem.) 416 957 1683 ppower@bereskinparr.com

Your Reference: 10/689,492 Our Reference: 571-886

INFORMATION DISCLOSURE STATEMENT

The Commissioner of Patents P.O. Box 1450 Alexandria, VA 22313-1450

Dear Sir:

Re: United States Patent Application Serial No.: 10/698,492

Filed: November 3, 2003

For: MULTICOMPONENT PROTEIN MICROARRAYS Inventors: John Brennan and Nicholas Rupcich

In accordance with 37 CFR 1.97 and 1.98, and in recognition of the duty of disclosure set forth in 37 CFR 1.56, Applicants hereby submit an Information Disclosure Statement on Form PTO-1449 containing a listing of patents and other publications of which Applicant is aware. Applicants are also submitting the references listed on the Information Disclosure Statement.

All of the patents and publications submitted herewith are in the English language. Accordingly a concise explanation of the relevance of the documents is not required.

The Examiner is requested to indicate consideration of these documents by initialing the appropriate column.

Applicants reserve the right to contest the applicability of any of these documents as prior art against the subject application. If the Examiner has any questions concerning this Information Disclosure Statement, he/she is requested to contact the undersigned. Entry of the enclosed Information Disclosure Statement is believed to be in order and is respectfully requested.

This Information Disclosure Statement is being filed before the issuance of a first official action, and therefore no fees are required. However, please charge our deposit account No. 02-2095 if such a fee is required.

Respectfully submitted,

JOHN BRENNAN et al.

Patricia Power

Registration No. 51,379

Dated: July 12, 2004

Bereskin & Parr Box 401, 40 King Street West Toronto, Ontario, Canada M5H 3Y2

(416) 364-7311

PTO/SB/08a (08-03)

Approved for use through 07/31/2006. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Complete if Known

Under the Paper of the Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Application Number 10/698,492

Filing Date November 3, 2003

First Named Inventor John Brennan

Art Unit 1645

Examiner Name N/A

(Use as many sheets as necessary)

Substitute

Sheet 1 of 4 Attorney Docket Number 571-886

	•		U.S. PATENT	OCUMENTS	
Examiner	Cito	Document Number	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant
Initials *	Cite No.1	Number - Kind Code ² (if known)	MM-DD-YYYY	Cited Document	Passages or Relevant Figures Appear
		US-6,468,759	10-22-02	Charych	
		US- 2003-170908	09-11-03	Bright et al.	
		US-			
-		US-			
		US-			
		US-			
	1	US-			
	1	US-			
	1	US-			
		US-			
		US-			
	1	US-			

FOREIGN PATENT DOCUMENTS									
Examiner	Cite	Foreign Patent Document	Publication	Name of Patentee or	Pages, Columns, Lines, Where Relevant				
	No.1	Country Code ³ - Number ⁴ - Kind Code ⁵ (<i>if known</i>)	Date MM-DD-YYYY	Applicant of Cited Document	Passages or Relevant Figures Appear	f⁵			
		WO 99/36576	07-22-1999	Packard Bioscience Company					
		WO 02/66162	08-29-2002	VIR A/S					
		WO 01/01139	01-04-2001	McMaster University					
		WO 01/09604	02-08-2001	The Research Foundation of State University of New York					

Examiner Signature	Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. Applicant's unique citation designation number (optional). See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. The reign of the reign of the Emperor must precede the serial number of the patent document. Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

PTO/SB/08b(08-03)

Approved for use through 07/31/2006. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number Under the Paperwork

Substitute for form 1449B/PTO Complete if Known Application Number 10/698,492 INFORMATION DISCLOSURE Filing Date November 3, 2003 STATEMENT BY APPLICANT John Brennan First Named Inventor Art Unit 1645 (Use as many sheets as necessary) N/A Examiner Name Attorney Docket Number 571-886 Sheet 2

		NON PATENT LITERATURE DOCUMENTS	
Examiner Initials *	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	1.	ZHOU, M. et al., "Two Fluorometric Approaches to the Measurement of Dextranase Activity", Analytical Biochemistry, 1998, pp. 257-259, Vol. 260.	
	2.	ARENKOV, P. et al., "Protein Microchips: Use for Immunoassay and Enzymatic Reactions", Analytical Biochemistry, 2000, pp. 123-131, Vol. 278.	
_	3.	CHO, E.J. et al., "Tools to Rapidly Produce and Screen Biodegradable Polymer and Sol-Gel-Derived Xerogel Formulations", Applied Spectroscopy, 2002, pp. 1385-1389, Vol. 56, No. 11.	
	4.	TEMPLIN, M.F. et al., "Protein microarray technology", Trends in Biotechnology, 2002, pp. 160-166, Vol. 20, No. 4.	
	5.	MACBEATH, G. et al., "Printing Proteins as Microarrays for High-Throughput Function Determination", Science, 2000, pp. 1760-1763, Vol. 289.	
	6.	ZHU, H. et al., "Analysis of yeast protein kinases using protein chips", Nature Genetics, 2000, pp. 283-289, Vol. 26.	
	7.	ZHU, H. et al., "Global Analysis of Protein Activities Using Proteome Chips", Science, 2001, pp. 2101-2105, Vol. 293.	
	8.	RUIZ-TAYLOR, L.A. et al., "Monolayers of derivatized poly(L-lysine)-grafted poly(ethylene glycol) on metal oxides as a class of biomolecular interfaces", PNAS, 2001, pp. 852-857, Vol. 98, No. 3.	
	9.	MITCHELL, P., "A perspective on protein microarrays", Nature Biotechnology, 2002, pp. 225-229, Vol. 20.	
	10.	GILL, I. et al., "Bioencapsulation within synthetic polymers (Part 1): sol-gel encapsulated biologicals", Tibtech, 2000, pp. 282-296, Vol. 18.	
	11.	PARK, C.B. et al., "Sol-Gel Encapsulated Enzyme Arrays for High-Throughput Screening of Biocatalytic Activity", Biotechnology and Bioengineering, Inc., 2002, pp. 229-235, Vol. 78, No. 2.	
	12.	OBERT, R. et al., "Enzymatic Conversion of Carbon Dioxide to Methanol: Enhanced Methanol Production in Silica Sol-Gel Matrices", J. Am. Chem. Soc., 1999, pp. 12192-12193, Vol. 121.	

Signature Considered Considered	Examiner Signature		Date Considered	·
---------------------------------	-----------------------	--	--------------------	---

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance

and not considered. Include copy of this form with next communication to applicant.

Applicant's unique citation designation number (optional).

Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 120 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

PTO/SB/08b(08-03)

Approved for use through 07/31/2006. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

To the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449B/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 3 of 4

or information unless it contains a valid OMB control number
Complete if Known
10/698,492
November 3, 2003
John Brennan
1645
N/A
571-886

		NON PATENT LITERATURE DOCUMENT	
_	1	NON PATENT LITERATURE DOCUMENTS	
Examiner	Cite		
Initials *	No.1	the item (book, magazine, journal social soc	
	+ 140.	number(s) serial, symposium, catalog etc.), date appropriate), title of	
		the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue EMILI, A.Q. et al., "Large-scale functional analysis using a serious properties."	1 .
	13.	nn 303 207 Large-scale functional analysis uping a survival where published.	
	1	PP. 393-397, Vol. 18. State analysis using peptide or protein arrays" Nature Pietra	4_
		EMILI, A.Q. et al., "Large-scale functional analysis using peptide or protein arrays", Nature Biotechnology, 2000,	
	14.	LUPREURE C at al. (mr.).	
	l '''	Biochemistry and Biophysics 1998 as Catalyzed Hydrolysis of Thiourea and Thiography	
	 	Biochemistry and Biophysics, 1998, pp. 299-303, Vol. 349, No. 2.	
	1 45	I VVII I I AMC A K	1
	15.	Sensor for Alcohole and Al-Gel-Encapsulated Alcohol Dehydrogeness	1
		WILLIAMS, A.K. et al., "Sol-Gel-Encapsulated Alcohol Dehydrogenase as a Versatile, Environmentally Stabilized BADJIC, J. et al. "Effects at E.	+
		BAD IIC. 1 - 4 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	I
1	16.	and Unfall, "Effects of Encapsulation in Sol Cal Cal	
		and chroteing of Bovine Carbonic Anhydrase III Conference Carbonic Carbonic Anhydrase III Conference Carbonic	
		BADJIC, J. et al., "Effects of Encapsulation in Sol-Gel Silica Glass on Esterase Activity, Conformational Stability, YAMANAKA, S.A. et al., "Nicetical Stability, and Unfolding of Bovine Carbonic Anhydrase II", Chem. Mater., 1999, pp. 3671-3679, Vol. 11.	
- 1	17.		1
	17.	of Enzymatic Activity in Silicate Sci Color Dinucleotide Phosphate Fluorescent	ŀ
		YAMANAKA, S.A. et al., "Nicotinamide Adenine Dinucleotide Phosphate Fluorescence and Absorption Monitoring 9096, Vol. 117. YAMANAKA, S.A. et al., "Nicotinamide Adenine Dinucleotide Phosphate Fluorescence and Absorption Monitoring 9096, Vol. 117. YAMANAKA, S.A. et al., "Enzymatic Activity of Co. Adenies Phosphate Fluorescence and Absorption Monitoring YAMANAKA, S.A. et al., "Enzymatic Activity of Co. Adenies Phosphate Fluorescence and Absorption Monitoring YAMANAKA, S.A. et al., "Enzymatic Activity of Co. Adenies Phosphate Fluorescence and Absorption Monitoring YAMANAKA, S.A. et al., "Enzymatic Activity of Co. Adenies Phosphate Fluorescence and Absorption Monitoring YAMANAKA, S.A. et al., "Enzymatic Activity of Co. Adenies Phosphate Fluorescence and Absorption Monitoring YAMANAKA, S.A. et al., "Enzymatic Activity of Co. Adenies Phosphate Fluorescence and Absorption Monitoring YAMANAKA, S.A. et al., "Enzymatic Activity of Co. Adenies Phosphate Fluorescence and Absorption Monitoring YAMANAKA, S.A. et al., "Enzymatic Activity of Co. Adenies Phosphate Fluorescence and Absorption Monitoring YAMANAKA, S.A. et al., "Enzymatic Activity of Co. Adenies Phosphate Fluorescence and Absorption Monitoring YAMANAKA, S.A. et al., "Enzymatic Activity of Co. Adenies Phosphate Fluorescence and Absorption Monitoring YAMANAKA, S.A. et al., "Enzymatic Activity of Co. Adenies Phosphate	
		TAMANAVA O.	
1	18.	Transparent Sol. et al., "Enzymatic Activity of Oxalate Ovideas	
		YAMANAKA, S.A. et al., "Enzymatic Activity of Oxalate Oxidase and Kinetic Measurements by Optical Methods in	
1	7	Transparent Sol-Gel Monoliths", Journal of Sol-Gel Science and Technology, 1996, pp. 117-121, Vol. 7. BESANGER, T.R. et al., "Screening of Inhibition."	
1	19.	Chem 2000	
	- 1	BESANGER, T.R. et al., "Screening of Inhibitors Using Enzymes Entrapped in Sol-Gel-Derived Materials", Anal. ZHEND 1.	
		711515 Sci-Derived Materials", Anal.	_
- 1	20.		
. 1		Kinetics within Protein-Doped Sol-Gel-Derived Glass Monoliths", Anal. Chem., 1997, pp. 3940-3949, Vol. 69. CESAREO, S.D. et al., "Kinetic properties of the state of the stat	
		Songel-Derived Glass Monoliths", Anal Chem 1007	
- 1	.	CESAREO, S.D. et al. "Kingsia and Michael Street, 1997, pp. 3940-3949, Vol. 69.	
- 1	21.	Microbiology Letters 1992 and Communication of Helicobacter pylori urgano communication of the Communication of th	
		CESAREO, S.D. et al., "Kinetic properties of Helicobacter pylori urease compared with jack bean urease" FEMS Microbiology Letters, 1992, pp. 15-21, Vol. 99.	
- 1		DIYON NE	
	22.	Drocty, N.E. et al., "Jack bean urease (FC 3.5.1.5) \ A.G.	
	- 1	DIXON, N.E. et al., "Jack bean urease (EC 3.5.1.5). V. On the mechanism of action of urease on urea, formamide, accetamide, N-methylurea, and related compounds", Can. J. Biochem., 1980, pp. 1335-1344, Vol. 58.	
		compounds", Can. J. Biochem., 1980, pp. 1335-1344, formamide,	
	23.	ZHU, H. et al., "Protein arrays and microarrays", Current Opinion in Chemical Biology, 2001, pp. 40-45, Vol. 5.	
1 '	-0.	and microarrays", Current Opinion in Chemical Biole	
		. Sherilical Biology, 2001, pp. 40-45. Vol. 5	
- 1 .		TUU M of al. 114 ct. ct.	
2	24. H	tydrogen Percycles same Nonfluorescent Derivative of Resource (
	A	hydrogen Peroxide: Applications in Detecting the Activity of Phagocyte NADPH Oxidase and Other Oxidases", analytical Biochemistry, 1997, pp. 162-168, Vol. 253.	
		property, 1997, pp. 162-168, Vol. 256 Prinagocyte NADPH Oxidase and Oxidase an	

-	Examiner			
(Signature		Date	
	*EXAMINER: Initia	al if are	Considered	1
	and not considered	al if reference considered, whether or not citation is in confo	(manee with the	

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

'Applicant's unique citation designation number (optional). Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by Complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1400.

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitut	e for form 1449	В/РТО			Complete if Known
=		0 N D 10		Application Number	10/698,492
			CLOSURE	Filing Date	November 3, 2003
STA	TEMEN'	T BY A	PPLICANT	First Named Inventor	John Brennan
	•			Art Unit	1645
	(Use as ma	ny sheets as	necessary)	Examiner Name	N/A
Sheet	4	of	4	Attorney Docket Number	571-886

		NON PATENT LITERATURE DOCUMENTS	
Examiner Initials *	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T 2
	25.	KODADEK, T., "Protein microarrays: prospects and problems", Chemistry & Biology, 2001, pp. 105-115, Vol. 8.	
-	26.	MERKLE, S.A., "Forest tree biotechnology", Current Opinion in Biotechnology, 2000, pp. 298-302, Vol. 11.	
	27.	JENKINS, R.E. et al., "Arrays for protein expression profiling: Towards a viable alternative to two-dimensional gel electrophoresis?", Proteomics, 2001, pp. 13-29, Vol. 1.	
	28.	CAHILL, D.J. et al., "Protein and antibody arrays and their medical applications", Journal of Immunological Methods, 2001, pp. 81-91, Vol. 250.	
	29.	WILSON, D.S. et al., "Functional protein microarrays", Current Opinion in Chemical Biology, 2001, pp. 81-85, Vol. 6.	
	30.	GILL, I. et al., "Encapsulation of Biologicals within Silicate, Siloxane, and Hybrid Sol-Gel Polymers: An Efficient and Generic Approach", J. Am. Chem. Soc., 1998, pp. 8587-8598, Vol. 120.	
	31.	de Marcos, S. et al., "An optical glucose biosensor based on derived glucose oxidase immobilized onto a sol-gel matrix", Sensors and Actuators B, 1999, pp. 227-232, Vol. 57.	
	32.	PANDEY, P.C. et al., "Reversal in the kinetics of the M state decay of D96N bacteriorhodopsin: probing of enzyme catalyzed reactions". Sensors and Actuators B, pp. 470-474, 1996, Vol. 35-36.	
	33.	GILL, I. et al., "Bio-doped Nanocomposite Polymers: Sol-Gel Bioencapsulates", Chem. Mater., 2001, pp. 3404-3421, Vol. 13.	

Examiner	Date	
Signature	Considered	

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

and not considered. Include copy of this form with next communication to applicant.

Applicant's unique citation designation number (optional). Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 120 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.